

ABSTRACT

Synchronization errors in a received pulse train are detected by detecting rising or falling transitions in the pulse train, generating numbers in a repeating cycle having a length corresponding to the pulse rate, selecting the number generated when each transition is detected, and performing a predetermined operation on the selected numbers. The predetermined operation may include, for example, comparing the average values of the selected numbers in successive groups of transitions. Alternatively, the predetermined operation may include taking a difference between consecutively selected numbers to measure pulse widths in the pulse train. Synchronization error detection can be used to supplement data error detection and correction methods such as forward error correction and cyclic redundancy checks.